AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A sensor comprising at least one sensor unit shaped as a cantilever, said sensor unit comprises a capture surface, and a piezoresistive element with a pair of wires for applying an electrical field over the piezoresistive element, the distance between the wires along the piezoresistive element being defined as the length of the piezoresistive element, the piezoresistive element has a longitudinal direction and a transverse direction along the length of the piezoresistive element when an electrical field is applied over the piezoresistive element and the piezoresistive element is subjected to a stress, the longitudinal direction is defined as a direction which is one of the axis x, y or z of a coordinate system and wherein there is a stress component and a current component, the transverse direction is perpendicular to said longitudinal direction, said piezoresistive element being of an anisotropic material, and being arranged so that the numerical value of the sum of the longitudinal piezoresistive coefficient π_l and the transverse piezoresistive coefficient π_t along at least 25 % of the length, of the piezoresistive element being at least $10^{-10}Pa^{-1}$ x P, wherein P is the piezoresistance factor, and wherein the piezoresistive coefficients π_l and π_t are determined as ~~composants~~ components in the coordinate system used to determine the longitudinal direction.

2. (Original) A sensor according to claim 1 wherein the piezoresistive element being of doped single crystalline silicon.

3. (Previously presented) A sensor according to claim 1 wherein the sensor unit comprises a single crystalline silicon piezoresistive element encapsulated in a single crystalline silicon electrical shield.

4. (Previously presented) A sensor according to claim 1 wherein the piezoresistive element is encapsulated in a shield of a non-conducting material selected from the group consisting of nitrides, non-conducting polymers, metal oxides, ceramics, diamond films, silicon carbide, tantalum oxide, silicon, glass, mixtures and combinations thereof.

5. (Previously presented) A sensor according to claim 1 wherein said sensor unit is shaped as a cantilever extending in a length and linked in both of its endings to form a cantilevered bridge.

6. (Previously presented) A sensor according to claim 1 wherein the sensor unit has a thickness in the interval of 0.05 μm to 5 μm.

7. (Previously presented) A sensor according to claim 1 wherein the piezoresistive element has a thickness in the interval of 10 nm to 500 nm.

8. (Previously presented) A sensor according to claim 1 wherein the piezoresistive element has a shape selected from the group consisting of U shaped, latter shaped, meander shaped and V shaped.

9. (Previously presented) A sensor according to claim 1 wherein the piezoresistive element is n-type single crystalline silicon.

10. (Previously presented) A sensor according to claim 9 wherein said n-type silicon piezoresistive element being orientated along the <110> direction of silicon.

11. (Previously presented) A sensor according to claim 9 wherein said n-type silicon piezoresistive element being orientated along the <100> direction of silicon.

12. (Previously presented) A sensor according to claim 1 wherein the piezoresistive element being of single crystalline silicon doped with one or more of the ions selected from the group consisting of boron ion, phosphorous ion and arsenic ion.

13. (Previously presented) A sensor according to claim 1 wherein the piezoresistive element being of single crystalline silicon doped with at least 10^{16} ions/cm^3.

14. (Previously presented) A sensor according to claim 1 wherein the piezoresistive element being of single crystalline silicon doped with maximum of 10^{21} ions/cm^3.

15. (Previously presented) A sensor according to claim 1, wherein the sensor unit comprises two major surfaces, and at least a part of one or both of the major surfaces constitutes the capture surface, and the piezoresistive element has a neutral plan distance of maximum 50 nm, wherein the neutral plan distance is measured as the shortest distance between the middle plan of the piezoresistive element, defined as the middle plan through the piezoresistive element which is parallel to the neutral plan, and the neutral plan, wherein the neutral plan is defined as the plan along which the sum of the compressive and tensile stress acting on the piezoresistive element is as close to zero as possible.

16. (Previously presented) A sensor according to claim 1, wherein the sensor unit comprises two major surfaces, which major surfaces partly or totally constitute a capture surface.

17. (Previously presented) A sensor according to claim 1 wherein said sensor comprises one or more fluid chambers, said one or more sensor units partly or totally protrudes into said fluid chamber(s) so that a fluid applied in the chamber is capable of coming into contact with at least part of the surface of the sensor unit(s).

18. (Previously presented) A sensor according to claim 1 wherein said fluid chamber or chambers is/are in the form of interaction chamber(s), preferably comprising a channel for feeding a fluid into the interaction chamber(s).

19. (Previously presented) A sensor according to claim 1 wherein said sensor is adapted for use in detection of a substance in a liquid.

20. (Previously presented) A sensor according to claim 4 wherein the piezoresistive element is encapsulated in a shield of nitrides selected from the group consisting of silicon nitride and tantalum nitride.

21. (Previously presented) A sensor according to claim 4 wherein the piezoresistive element is encapsulated in a shield of the non-conducting polymer octafunctional epoxidized novalac.

22. (Previously presented) A sensor according to claim 13 wherein the piezoresistive element being of single crystalline silicon doped with at least 10^{17} ions/cm^3.

23. (Previously presented) A sensor according to claim 13 wherein the piezoresistive element being of single crystalline silicon doped with at least 10^{18} ions/cm^3.

24. (Previously presented) A sensor according to claim 14 wherein the piezoresistive element being of single crystalline silicon doped with maximum 10^{20} ions/cm^3.

25. (Previously presented) A sensor according to claim 14 wherein the piezoresistive element being of single crystalline silicon doped with maximum 10^{19} ions/cm^3.

26. (Previously presented) A sensor according to claim 15, wherein the piezoresistive element has a neutral plan distance of maximum 400 nm.

27. (Previously presented) A sensor according to claim 15, wherein the piezoresistive element has a neutral plan distance of maximum 3 μm.

28. (Canceled)